NOTES.

Professor Luigi Cremona, of Rome, has been elected a foreign member of the American Academy of Arts and Sciences, of Boston. F.

Any of our readers knowing of a vacancy in mathematics, or of a prospective vacancy, will confer a favor on us by informing us of the same. We are in a position to recommend a number of most excellent candidates for such vacancies. F.

On December 30th, 1902, editor, Dr. L. E. Dickson, was married to Miss Susan M. Davis, of Waco, Texas. After the wedding, the fortunate couple started on an extended trip through Old Mexico, remaining several weeks at the City of Mexico. Congratulations are now in order. F.

BOOKS AND PERIODICALS.

The Elements of Plane and Spherical Trigonometry. By T. U. Taylor, C. E., University of Texas, and C. Puryear, M. A., C. E., Agricultural and Mechanical College of Texas. Large 8vo. Cloth. 160 pages of text, 67 pages of tables. Price, $1.25. 1902. Boston: Ginn & Co.

The authors have succeeded in realizing their aim to present the essential parts of trigonometry in a form adapted to practical applications. The chief novelty lies in the excellent sets of new exercises and problems of a practical character. Some disappointment is felt over the omission of the projective proofs of the addition formulae. On page 46 functions are indicated with the angle omitted. Napier's rules are not merely an aid to the memory, but of added value in that they enable us to pick out without device that one of the ten formulae needed in a given case. While noting the occurance of the vowels *a* and *o* in Napier's Rules, no mention is made of the vowel *i* in *sine* and *middle*. The book appears to possess pedagogical excellence, and the typography is attractive. D.

Solid Geometry. Revised Edition. By G. A. Wentworth. 8vo. xvi+218 pages. Price $0.75. 1902. Boston: Ginn & Co.

The book is a reprint of pages 251-459 of Wentworth's revised Plane and Solid Geometry (1899), with modified table of formulas and index, and ten introductory pages giving the necessary references to plane geometry. D.

An Elementary Treatise on the Mechanics of Machinery with special reference to the Mechanics of the Steam Engine. By Joseph N. Le Conte, Instructor in Mechanical Engineering, University of California, Associate member of the American Institute of Electrical Engineers, etc. 8vo. Cloth, x+311 pages. Price, $2.25. New York: The Macmillan Co.

The book is divided into three parts. The first two embody the more important principles of what may be called the Kinematics of Machinery, and the third part treats of the Mechanics of the Steam Engine, kinematically and dynamically. The work presents in a most excellent manner the applications of the principles of mechanics to certain prob-

lems connected with machinery. All the problems are clearly worked out and illustrated with diagrams neatly constructed. This book will prove of great value both to the theoretical mechanic and the practical machinist. F.

Elementary Applied Mechanics. By T. Alexander, C. E., M. Inst. C. E. I., M. A. I. (Hon. Causa), 4th Order of Meiji, Japan, Professor of Engineering, Trinity College, Dublin, and A. W. Thomson, D. Sc., Professor of Engineering, College of Science, Poona. With numerous diagrams, and a series of graduated examples carefully worked out. 8vo. Cloth, xx+575 pages. Price, $5.25. New York: The Macmillan Co.

In this work the following subjects are treated very fully: Internal stress and strain; transverse stress; bending moments, and shearing forces for fixed loads, for combined fixed loads, and for moving loads; resistance, in general, to bending and shearing at the various cross-sections of framed girders and solid beams; stress at an internal point of a beam; curvature, slope, and deflection; and a number of other allied subjects. Each subject treated is fully illustrated with the solutions of a number of problems bearing on it. The work forms an elementary consecutive course on the subject of internal stress and strain, based on the late Professor Rankine's treatment of the subject in his *Applied Mechanics* and *Civil Engineering*. It is the best elementary treatise that has yet appeared. F.

Manual of Advanced Optics. By C. Riborg Mann, Assistant Professor of Physics in the University of Chicago. 8vo. Cloth, 196 pages. Price, $2.00. Chicago: Scott, Forseman & Co.

The object of this work is to meet the needs of the more advanced students of Optics. While there are many excellent works treating the theory of optics very exhaustively, yet none treat of some of the recent and important discoveries. No work thus far, to my knowledge, treats of the practical applications of that marvelous little instrument, the Interferometer, invented by Dr. Michelson. In the work before us is found not only the treatment of the adjustment and use of the interferometer, but also the use of defracting and concave gratings, the prism, spectrometer, etc. Dr. Mann has the happy faculty of clearing up the difficulties of the subject, and this book will be greatly appreciated by all students interested in the subject of Optics. F.

The American Journal of Mathematics. Edited by Frank Morley and others. Published quarterly, under the auspices of the Johns Hopkins University. Price, $5.00 per year in advance.

No. 1 of Vol. XXV contains the following articles: The Parametric Representation of the Tetrahedroid Surface, by D. M. Lehmer; On Ternary Monomial Substitution-Groups of Finite Order with Determinant + or −1, by E. B. Skinner; On the Forms of Unicusal Sextic Scrolls, and On the Forms of Sextic Scrolls of Genus One, by Virgil Snyder; Note on Symmetric Functions, by E. D. Roe, Jr. F.

The Annals of Mathematics. Edited by Ormond Stone, W. E. Byerly, and others. Published Quarterly under the auspices of Harvard University. Price, $2.00 per year in advance.

No. 2 of Vol. 4, second series, contains the following articles: The Logarithm as a Direct Function, by J. W. Bradshaw, with an Introduction by W. F. Osgood; On Positive Quadratic Forms, by Paul Saurel; Multiple Points on Lissajous's Curves in Two and Three Dimensions, by Edward A. Hook; A Special Quadri-Quadric Transformation of Real Points in a Plane, by C. C. Engberg.